WHAT IS CLAIMED IS:

1. An exposure apparatus that exposes a substrate via a mask with an energy beam in a state where said mask and said substrate are stationary, said exposure apparatus comprising an exposure system which includes:

a projection optical system having an image field large enough so that a divided area on said substrate exposed in one time with a scanning exposure apparatus can be exposed in one shot by projecting said energy beam outgoing from said mask onto said substrate; and

a substrate stage on which said substrate is mounted.

2. The exposure apparatus according to Claim 1, wherein said one divided area exposed with said scanning exposure apparatus has a rectangular shape with a size which is one of (25mm x 33mm) and (26mm x 33mm).

3. The exposure apparatus according to Claim 2, wherein said mask is a 6-inch size, and said projection optical system has a projection magnification of 1/4.

4. The exposure apparatus according to Claim 1, wherein said one divided area exposed with said scanning exposure apparatus has a rectangular shape with a size of (22mm x 26mm).

5. The exposure apparatus according to Claim 4, wherein said mask is a 6-inch size, and said projection optical system

has a projection magnification of 1/5.

6. The exposure apparatus according to Claim 1, wherein said image field has a circular shape with a diameter in which said divided area of the scanning exposure apparatus is almost inscribed.

7. The exposure apparatus according to Claim 1, wherein said projection optical system is capable of resolving a pattern having a line width of 0.35μm on said substrate.

8. The exposure apparatus according to Claim 1, said exposure apparatus further comprising:

a control system which totally controls said exposure system and changes a control factor of said exposure system related to throughput in accordance with a minimum line width of a pattern subject to transfer.

9. The exposure apparatus according to Claim 8, wherein said control factor subject to said change includes at least one of:

a permissible value of a physical quantity related to a position setting accuracy of said substrate stage;

time until position setting of said substrate stage is judged complete;

a permissible value of error from a target surface of a surface of said substrate with respect to an optical axis direction of said projection optical system;

a permissible value of heat quantity stored in said projection optical system due to irradiation of said energy beam;

a permissible value of vibration quantity of said substrate stage during exposure;

a permissible error of an exposure amount provided on said substrate;

a physical quantity related to an alignment measurement accuracy of said substrate; and

an on/off of automatic focusing on alignment measurement.

10. The exposure apparatus according to Claim 9, wherein said permissible value of said physical quantity related to a position setting accuracy of said substrate stage includes at least one of a permissible error from a position setting target value, a maximum permissible velocity, and a maximum permissible acceleration.

11. The exposure apparatus according to Claim 9, wherein said physical quantity related to an alignment measurement accuracy of said substrate includes at least one of a quantity related to selection on selecting alignment marks for alignment measurement from a plurality of alignment marks on said substrate and a measurement time of said alignment mark.

12. The exposure apparatus according to Claim 8, wherein said control system changes said control factor in 2 stages, in the case when said minimum line width is less than 0.7μm

and in the case when said minimum line width is equal to and over 0.7μm.

13. A device manufacturing method including a lithographic process, wherein exposure is performed using said exposure apparatus according to Claim 1 in said lithographic process.

14. A surface position adjustment unit that makes a surface of a second object almost coincide with an image plane of a projection optical system which projects a pattern formed on a first object, said unit comprising:

an irradiation system which forms a plurality of first irradiation points within a projection area of said pattern with said projection optical system by irradiating first lights from an oblique direction with respect to said second object, and also forms a second irradiation point in a vicinity of at least one corner of said projection area by irradiating a second light from an oblique direction on said second object;

a first photodetection sensor capable of individually detecting a reflection light from each of said first irradiation points photo-electrically, and of outputting a deviation signal corresponding to a deviation amount of said surface of said second object with respect to a predetermined reference surface related to an optical direction of said projection optical system at said each of said first irradiation points;

a second photodetection sensor capable of photo-electrically detecting a reflection light of said second

light from said second object;

a stage which holds said second object and can be driven in at least said optical direction; and

a driving unit which drives said stage in said optical axis direction based on an output of said second photodetection sensor to arrange said surface of said second object in a vicinity of a best image forming plane of said projection optical system, and drives said stage in said optical axis direction based on said output of said first photodetection sensor at each of said points to make said surface of said second object almost coincide with said best image forming plane of said projection optical system.

15. The surface position adjustment unit according to Claim 14, wherein at least one of said second irradiation point is arranged respectively in a vicinity of four corners of said projection area, and said second photodetection sensor is individually arranged corresponding to each of said second irradiation points.

16. The surface position adjustment unit according to Claim 15, wherein selection of a second photodetection sensor to be used can be made from at least four second photodetection sensors corresponding to said second irradiation points.

17. The surface position adjustment unit according to Claim 15, wherein said each of said second irradiation points are arranged within an area located on an outer side of two

triangular shaped areas, when said projection area is divided into four rectangular areas along a two dimensional direction perpendicular to said optical axis and each of said rectangular areas is diagonally divided into two in said two triangular shaped areas.

18. The surface position adjustment unit according to Claim 14, wherein said second photodetection sensor functions as a tracking sensor and an output of said second photodetection sensor includes whether there actually is a detection signal to be detected.

19. The surface position adjustment unit according to Claim 14, wherein a selection of a first photodetection sensor to be used can be made arbitrarily from said plurality of first photodetection sensors.

20. The surface position adjustment unit according to Claim 14, wherein said driving unit uses both outputs of said first photodetection sensor and said second photodetection sensor when said surface of said second object is in said vicinity of said best image forming plane of said projection optical system.

21. An exposure apparatus, said exposure apparatus comprising:

an exposure system that transfers a pattern formed on a mask onto a substrate via a projection optical system in

a state where said mask and said substrate are stationary, having a surface position adjustment unit which makes a surface of said substrate coincide with a best image forming plane of said projection optical system, wherein

said surface position adjustment unit includes:

an irradiation system which forms a plurality of first irradiation points within a projection area of said pattern with said projection optical system by irradiating first lights from an oblique direction with respect to said substrate, and also forms a second irradiation point in a vicinity of at least one corner of said projection area by irradiating a second light from an oblique direction on said substrate;

a first photodetection sensor capable of individually detecting a reflection light from each of said first irradiation points photo-electrically, and of outputting a deviation signal corresponding to a deviation amount of said surface of said substrate with respect to a predetermined reference surface related to an optical direction of said projection optical system at said each of said first irradiation points;

a second photodetection sensor capable of photo-electrically detecting a reflection light of said second light from said substrate;

a stage which holds said substrate and can be driven in at least said optical direction; and

a driving unit which drives said stage in said optical axis direction based on an output of said second

photodetection sensor to arrange said surface of said substrate in a vicinity of a best image forming plane of said projection optical system, and drives said stage in said optical axis direction based on said output of said first photodetection sensor at each of said points to make said surface of said substrate almost coincide with said best image forming plane of said projection optical system.

22. The exposure apparatus according to Claim 21, wherein at least one second irradiation point is formed respectively in a vicinity of four corners of a projection area of said projection optical system, and said second photodetection sensors are arranged individually corresponding to each of said second irradiation points.

23. The exposure apparatus according to Claim 21, wherein

said second irradiation point is formed in a vicinity of a plurality of corners of said projection area, and

said driving unit selects said second irradiation point formed in a vicinity of at least one corner of said plurality of corners in accordance with a position of a divided area on said substrate corresponding to said projection area, and drives said stage based on a photoelectric detection result by said second photosensor of a reflection light from a surface of said second object at said second irradiation point.

24. The exposure apparatus according to Claim 21, wherein said projection optical system has an image field large enough so that a divided area on said substrate can be exposed in one shot in a state where said mask and said substrate are stationary, said divided area being an area exposed in one time with a scanning exposure apparatus used to perform scanning exposure on said substrate at one of a timing before and after an exposure process of said substrate using said mask.

25. The exposure apparatus according to Claim 24, said exposure apparatus further comprising:

a control system which totally controls said exposure system and changes a control factor of said exposure system related to throughput in accordance with a minimum line width of a pattern subject to transfer.

26. The exposure apparatus according to Claim 21, said exposure apparatus further comprising:

a control system which totally controls said exposure system and changes a control factor of said exposure system related to throughput in accordance with a minimum line width of a pattern subject to transfer.

27. A device manufacturing method including a lithographic process, wherein exposure is performed using said exposure apparatus according to Claim 21 in said lithographic process.

28. A mask used in an exposure apparatus, said mask comprising:

a mask substrate; and

a predetermined pattern which is formed on one side of said mask substrate and includes a circuit pattern and a mask alignment mark for a scanning exposure apparatus and a mask alignment mark for a static type exposure apparatus.

29. The mask according to Claim 28, wherein said predetermined pattern further includes a pattern for aerial image measurement.